## ABSTRACT OF THE DISCLOSURE

A catalyst includes a cyclic imide compound having an N-substituted cyclic imide skeleton represented by following Formula (I):

wherein X is an oxygen atom or a hydroxyl group, and having a solubility parameter of less than or equal to 26 [(MPa)<sup>1/2</sup>] as determined by Fedors method. The catalyst may further comprise a metallic compound. By allowing (A) a compound capable of forming a radical to react with (B) a radical scavenging compound in the presence of the catalyst, an addition or substitution reaction product between the compound (A) and the compound (B) or a derivative thereof can be obtained.